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Motorola European Intellectual Property
Operations Seal House Seal Road
Basingstoke, Hants RG21 1NO(GB)(54) **Method of manufacturing an intelligent power semiconductor device.**

(57) An improved method is disclosed for manufacturing an intelligent power semiconductor device, which comprises sequential steps of forming an element forming region on a semiconductor substrate, forming a gate insulation film for a power transistor, forming a conductive layer for a gate electrode of power transistor on the gate insulation film, forming a tab region for the power transistor, forming a gate insulation film for a small signal transistor, introducing impurities into channel region of the small signal transistor to adjust the threshold voltage thereof,

forming a conductive layer for a gate electrode of the small signal transistor, and forming a source electrode and a drain electrode for each of the transistors. Since the process of forming the tab region of the power transistor is followed by the process of introducing impurities into the channel region of the small signal transistor, the threshold voltage of the small signal transistor is not influence by the process of forming the tab region of the power transistor.

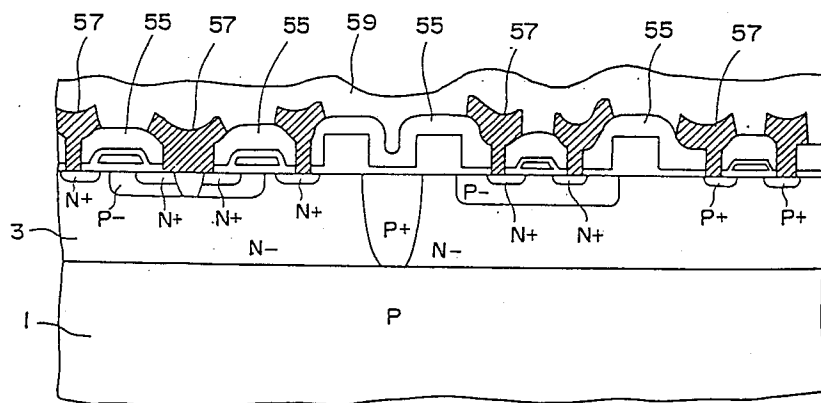


Fig. 12

EP 0 453 070 A3



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EUROPEAN SEARCH REPORT

Application Number

EP 91 30 1443

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	EP-A-0 314 465 (NEC CORP.) * column 4, line 8 - column 5, line 37; figure 1 *	1,2	H01L27/088 H01L21/82 H01L27/06
A	--- PATENT ABSTRACTS OF JAPAN vol. 11, no. 27 (E-474)(2474) 27 January 1987 & JP-A-61 196 568 (NISSAN MOTOR CO., LTD.) 30 August 1986 * abstract *	1,2	
A	--- EP-A-0 193 172 (NISSAN MOTOR CO., LTD.) * page 7, line 21 - page 9, line 14; figures 5A-5K *	1,2	
A	--- NEC RESEARCH AND DEVELOPMENT. no. 90, July 1988, TOKYO JP pages 1 - 9; M.HATTORI ET AL.: 'MOS Power Driver ICs for DC Motors' * page 1, left column, paragraph 1 - page 3, left column, paragraph 2 *	1,2	
A	--- EP-A-0 282 734 (K. K. TOSHIBA) -----		TECHNICAL FIELDS SEARCHED (Int. Cl.5) H01L
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 02 JANUARY 1992	Examiner ZOLLFRANK G.O.
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document			